

REMARKS

Applicants present new claims 19 and 20. These claims find support at page 4, line 25 to page 5, line 11 of the specification.

Applicants would like to offer a few additional remarks on the non-Newtonian constant "n" of U.S. Patent 4,544,189 Fukata (Fukata).

A polymer having a non-Newtonian constant ranging from 0.9 to 1.0 or less defined in $0.9 < n < 2.0$ as a degree of cross-linking and branching of Fukata (linear polymer) is a polymer showing not only pseudoplastic flow ($0.9 < n < 1.0$) but also Newtonian flow ($n=1$) which is quite different from branched and/or cross-linked polyarylene sulfides having a non-Newtonian coefficient of 1.05-1.20 showing only dilatant flow. In non-Newtonian flow, the flow is called "pseudoplastic flow" when the apparent coefficient viscosity decreases as shear stress increases and "dilatant flow" when the apparent coefficient viscosity increases as the shear stress increases.

Specifically, as is clear from Table 1 at page 21 of the present specification, Fukata does not teach nor suggest a fabric having the non-Newtonian coefficient of Examples 1-4 made of branched or cross-linked PAS as disclosed in Table 1 (1.06-1.19 for Examples 1-4 of the present application) or the corresponding cross-linked or branched PAS of the present application.

Specifically, the melt-blown, non-woven fabrics of EXAMPLES 1-4 made of branched or cross-linked polyarylene sulfide are constituted of extremely fine fibers (average fiber diameter of 5.7-8.1 μm) produced with good melt-blowing stability. In distinction, the melt-blown, non-woven fabrics of Comparative Examples 1 ($n = 1.02$) and 2 ($n = 1.02$) made of linear

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polyarylene sulfides are constituted of relatively thick fibers (average fiber diameter of 13.1-15.0 μm) produced with poor melt-blowing stability. Also, the melt-blown, non-woven fabric of COMPARATIVE EXAMPLE 3 ($n = 1.22$) made of excessively cross-linked polyarylene sulfide are constituted by relatively thick fibers (average fiber diameter of 17.3 μm) produced with poor melt-blowing stability.

Because the melt-blown, non-woven fabrics of the present invention are produced from branched and/or cross-linked polyarylene sulfides having a non-Newtonian coefficient of 1.05-1.20, they are constituted of extremely fine fibers and can be produced with remarkable stability. Such melt-blown, non-woven fabrics are useful for battery separators, liquid filters, gas filters, etc. (see page 21, line 3 to page 22, line 5 of the specification).

Therefore, one skilled in the art referring to Fukata would not be motivated to reach the present invention as recited in claims 1 and 18, and, accordingly, the present invention is patentable over Fukata.

In the AMENDMENT... of July 30, 2001, at Page 14, the second full paragraph from the bottom of the page, the phrase "[C]/(B)] of Senga, falls outside the range of the corresponding molar ratio [(c)/(b)] ranging from 0.0001/1 to 0.003/1 in the present application" should correctly read --[(C)/(B)] of Senga falls outside the range of the corresponding molar ratio [(c)/(b)] ranging from 0.0007/1 to 0.00 15/1 in the present application--.

In this regard, when 0.6 mol % of polyhaloaromatic compound is used, the upper limit of the range of the molar ratio [(c)/(b)] is $0.0015/1 \times 0.6/0.179 = 0.005/1$, which falls within the

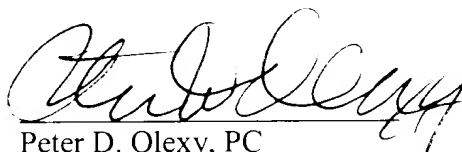
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range from 0.003/1 to 0.05/1 of Senga. Therefore, the amount of the polyhaloaromatic compound should be 0.01-0.3 mol %, based on 100 mol % of the alkaline metal sulfide.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Applicants hereby petition for any extension of time which may be required to maintain the pendency of this case, and any required fee, except for the Issue Fee, for such extension is to be charged to Deposit Account No. 19-4880.

Respectfully submitted,



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APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claims 19 and 20 are added as new claims.